Serum tocopherols, selenium and lung cancer risk among fin miners in China

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Abstract: To evaluate the association of prediagnostic serum antioxidants and lung cancer risk we conducted a case- control study nested in an occupational cohort of tin miners. Male workers free of cancer enrolled in the cohort. During up to 6 years of follow-up, 339 lung cancer cases were diagnosed and, among these cases, those who donated blood prospectively (n = 108) were eligible for this study. For each case, two controls alive and free of cancer at the time of case diagnosis were matched on age and date of blood collection. Overall, we observed no association between serum alpha-tocopherol, gamma-tocopherol or selenium levels and lung cancer risk. However, a significant gradient of decreasing lung cancer risk with increasing serum alpha-tocopherol was apparent for men less than 60 years old (odds ratio by tertile: 1.0, 0.9, 0.2; trend $p = 0.002$). Alpha-tocopherol was also protective in men who reported no alcohol drinking (OR by tertile: 1.0, 0.6, 0.3; trend $p = 0.008$). Although there were no significant overall associations between prospectively collected serum alpha-tocopherol, gamma-tocopherol or selenium and incidence of lung cancer, results from this study suggest that higher alpha-tocopherol levels may be protective in men less than 60 years old and in those who do not drink alcohol.